

ABSTRACT

A COMPUTER IMPLEMENTED METHOD, AND A SYSTEM

A computer implemented method performed in a device or virtual appliance configured for reinforcement learning, the method comprising, under control of at least one processor or at least one virtual processor: storing an untrained CNN classifier model for network traffic classification, storing an action space of a plurality of combinations of hyperparameters, for each of a plurality of episodes: initialising a plurality of episode variables, for each of a plurality of iterations: training the CNN classifier model using a state including the respective hyperparameters from the action space chosen by a reinforcement learning agent for that iteration, evaluating the accuracy of the trained CNN classifier model, evaluating the reward for that iteration using a quantized reward function with a negative reward for iterations with a lower accuracy compared to the previous iteration, storing at least the reward and the state in replay memory, and determining a state for the next iteration based on predetermined criteria, increasing the replay memory, and updating the replay memory with the action space from the iterations for that episode, training the reinforcement learning agent based on the replay memory.

(Figure 1)